

ON THE PHYTOPHAGOUS AND PARASITIC HYMENOPTERA COLLECTED BY MR. E. ERNEST GREEN IN CEYLON.

By P. CAMERON.

Plates A and B.

INTRODUCTION.

THE Ichneumonidæ and other Parasitic Hymenoptera are—as Dr. Sharp remarks in his volume on Insects (Cambridge Nat. Hist. Series)—“One of the most neglected of the great groups of Insects, though perhaps of greater economic importance to mankind than any other.” Besides the truly parasitic families, the group is usually made to include the gall-flies—insects which must be considered as inimical to mankind. It is, however, with the former families—those that prey upon the vegetarian insects—that we are chiefly concerned and that form the principal subject-matter of Mr. Cameron’s paper.

The importance of the Parasitic Hymenoptera will be recognized when it is understood that there is probably not a single vegetarian insect that does not constitute the host of one or more species of these parasites. Dr. Sharp states (*loc. cit.*) that the destructive “winter moth” (a serious pest of fruit trees) is known to be attacked by sixty-three distinct species of Hymenopterous parasites.

This neglect—by the generality of entomologists—must be attributed partly to the difficulties of determination and partly to their somewhat uninteresting exterior, for the family does not rank among its members many beautiful or remarkable forms. But the lack of conspicuous external beauty is amply compensated by the interest and complexity of their habits and development.

In spite of this comparative neglect, nearly 6,000 species of Ichneumonidæ have been described. By far the greater number of species undergo their early development inside the bodies of their hosts. The adult female is usually provided with a prominent slender ovipositor, by means of which the eggs are inserted into the tissues of the victim. The resulting larvæ subsist upon the juices (the lymph or blood), taking up all the

nourishment that should go to the building up of the tissues of the host, until eventually the latter dies of inanition. This collapse seldom occurs until the contained parasite (or parasites) is ready to undergo transformation into the pupal state. In the Ichneumonidæ proper the full-grown larva usually spins a compact cocoon either within the carcass of its victim or by the side of it.

The early stages of these parasites are not invariably passed within the body of the host. Three distinct conditions have been noticed :—

- (1) Both egg and larva may be interior.
- (2) The egg may be exterior and the larva interior.
- (3) Egg and larva may both be completely exterior.

This last condition may be observed in the case of the parasite of one of our principal tea pests, the "Tea Tortrix" (*Capua coffearia*, Niet.) The egg of this useful little parasite is attached to the back of the caterpillar, just behind the head. The young grub fixes itself in the same position and completes its growth, fully exposed, except for the leafy shelter constructed by the host. It is noticeable that even those species that attach their eggs to the surface of the caterpillars are still provided with a well-developed piercing ovipositor. With the parasite of the Tortrix this weapon is employed in piercing the leafy covering which conceals the victim. It is remarkable, also, that the periodical moulting of the caterpillar does not dislodge the parasite.

Besides true insects, spiders are subject to the attacks of Ichneumon flies.

E. E. G.

FIRST PAPER.

Our knowledge of the Hymenoptera of Ceylon, and more particularly of the plant-feeding and parasitic species, is very limited. There is a paper by the Russian Entomologist V. Motsulsky in the Bull. de la Soc. Imp. des Natur. de Moscow, XXXVI., 1863, wherein sixty-one parasitic species are described, including many new genera. The descriptions, however, leave much to be desired, while it is doubtful if many of the species have been referred to their proper genera. Motsulsky, for example, describes two species of *Microgaster*, but all the species I have seen, or have been described by recent writers, belong, not to *Microgaster*, but to the allied genus *Apanteles*. Consequently one is in doubt if the species described by Motsulsky belong to *Microgaster* as now limited, or to *Apanteles*, or even to some new genus; as is probably the case with the species I have in this

paper doubtfully referred to *Microgaster*. The same remark applies to the species of *Microgaster* described by Walker. The systematic position of some of the genera described by the Russian Hymenopterist is also doubtful in some cases. Thus his genus *Calliopteroma*, referred by him to the *Ichneumonidæ*, belongs to the *Encyrtidæ* (*Chalcididæ*) according to that eminent authority Dr. Wm. H. Ashmead, *cf.* Proc. U. S. Nat. Mus. XXIII., 152. The late Mr. Francis Walker described (Ann. Mag. Nat. Hist. 1860, VI.), a number of species and some new genera, none of which I have been able to identify, nor has Dr. Ashmead, *l.c.*, been able to refer them to their proper tribes. I do not know where Walker's types are. Apparently they are not in the British Museum, otherwise Col. C. T. Bingham would have described the aculeates in his work on the Aculeate Hymenoptera of British India and Ceylon. In that work he has merely reproduced Walker's descriptions. I have myself (Manchester Memoirs) described a few species taken by Mr. G. A. J. Rothney and by Col. Yerbury, and in Proc. U. S. Nat. Mus. XVIII., Dr. Ashmead has described some species, mostly reared from Lepidoptera and Coccidæ, taken or bred by Mr. Green. And some species have been described by J. O. Westwood in his Thesaurus Entomologicus Oxoniensis. From what I have said it is evident that our information regarding the Hymenoptera of Ceylon is of a very restricted nature—a remark that applies with even more force to Southern India.

The following species are here described :—

SIRICIDÆ.

1. *Xiphydria striatifrons*, n. sp.

BETHYLINÆ.

2. *Epyris foveatus*, n. sp.
3. *Rhacoteleia pilosa*, n. g. et sp.

CHALCIDIDÆ.

4. *Spilomegastigmus ruficeps*, n. g. et sp.

EVANIIDÆ.

5. *Evania interstitialis*, n. sp.
6. *Evania peradeniyæ*, n. sp.
7. *Gasteruption tricoloratum*, n. sp.
6. *Gasteruption ceylonicum*, n. sp.

AGATHIDINÆ.

9. *Agathis kandyensis*, n. sp.
10. *Agathis oya*, n. sp.
11. *Agathis ceylonicus*, n. sp.
12. *Microdus greeni*, n. sp.

CHELONINÆ.

13. *Chelonus tricoloratus*, n. sp.
14. *Phomerotoma hendecasisella*, n. sp.

CARDIOCHILINÆ.

15. *Ernestiella nigromaculata*, n. g. et sp.

MICROGASTERINÆ.

16. *Microgaster carinicollis*, n. sp.

BRACONINÆ.

17. *Iphiaulax xanthopsis*, n. sp.
18. *Iphiaulax fulvopilosus*, n. sp.
19. *Iphiaulax greeni*, n. sp.
20. *Iphiaulax ernesti*, n. sp.
21. *Iphiaulax kirbyi*, n. sp.
22. *Iphiaulax erythroua*, n. sp.
23. *Iphiaulax haragamensis*, n. sp.
24. *Rhacospathius striolatus*, n. g. et sp.
25. *Philomacroploea basimacula*, n. g. et sp.

RHOGADINÆ.

26. *Paraspinaria pilosa*, n. g. et sp.
27. *Holcobracon fulvus*, n. g. et sp.
28. *Tropobracon luteus*, n. g. et sp.
29. *Troporhogas spilonotus*, n. g. et sp.
30. *Troporhogas albipes*, n. sp.
31. *Troporhogas maculipennis*, n. sp.
32. *Troporhogas tricolor*, n. sp.
33. *Troporhogas ruficeps*, n. sp.
34. *Troporhogas lateralis*, n. sp.
35. *Troporhogas trimaculata*, n. sp.

CRYPTINÆ.

36. *Bathycrisis striaticollis*, n. g. et sp.

SIRICIDÆ.

- 1.—*Xiphydria striatifrons*, sp. nov.

Plate A, fig. 1.

Black, a large irregular mark, broader than long, on the face, two small irregular oblique marks above the antennæ, a line on the inner eye orbits, with a rounded projecting point in the middle and dilated above; on the outer side the line is continued half way up the eyes, the upper part projecting obliquely outwards, a large mark on the top of the temples, irregularly narrowed on the inner side, the base and lower side of the propleuræ, the apex, two small spots on the base of the scutellum, a small and a large mark

closely united on the sides of the post-scutellum, a longish mark on the sides of the first abdominal segment, a small one on the third and fifth, a slightly larger one on the fourth, a large, long, oblique one on the penultimate, and an oblique mark, transverse behind, more irregular at the base, and narrowed to a point below on the last abdominal segment, and a thin curved narrow line on the top of the mesopleuræ, white. Legs dark red, the coxæ marked with white; the hind tibiæ darker, their base and the metatarsus white, the other joints of the hind tarsi, blackish. The inner side of the mandibles dark rufous. Wings hyaline, highly iridescent, the nervures and stigma black, ♀.

Length 11.5 mm.

Pundalu-oya, February.

Front furrowed in the middle, the furrow widest above; closely, distinctly striated, the striæ becoming strongest below and extending on to the face. Vertex smooth, shining. Middle lobe of mesonotum closely rugose; the apex reticulated; the lateral lobes irregularly transversely striated. Scutellum coarsely rugose at the base, the rest smooth and shining. Apex of propleuræ sparsely, the mesopleuræ more closely and strongly punctured throughout. Transverse marginal nervure received very shortly beyond the second transverse cubital, which is roundly curved towards the base of the wings; both the recurrent nervures are received near the apex of the basal third of the cellule.

The antennæ are 15-jointed, have the flagellum thickly covered with a short, black, stiff pubescence and taper distinctly and gradually towards the apex.

This species may be known from the two known Indian species (*X. 4-maculata*, Cam. & *orientalis*, West.) by the antennæ being 15-jointed, in addition to the other specific differences.

BETHYLINÆ.

2.—*Epyris* (?) *foveatus*, sp. nov.

Black, shining, the mandibles, antennæ, and legs rufotestaceous; wings hyaline, the basal nervures and costa testaceous, the stigma and stigmal branch darker coloured; the head, thorax, and ventral surface covered with longish fuscous hair, ♂.

Length 4 mm.

Peradeniya, May.

Flagellum of antennæ densely covered with long white pubescence, as long as the thorax; scape about four times as long as its thickness at the apex; pedicle longer than wide fully half the length of the first flagellar joint, which is of the length of the second; the last two joints are darker coloured, about three times

longer than thick. Parapsidal furrows and the transverse furrow at the base of scutellum wide and deep. Post-scutellum with a deep, semi-circular fovea in the centre at the base. A deep transverse furrow at the base of the metanotum, widened laterally and bounded at the apex by a stout keel. Metanotum with a stout keel down the middle, stoutly transversely striated; the apical slope finely transversely striated in the middle. Pro- and meso-pleuræ smooth; a deep oval fovea near the centre of the mesopleuræ, with a smaller one below; shortly beyond the middle is a deep depression finely striated in the centre, rounded below, where it is wider than it is above. Metapleuræ finely, closely striated. First abdominal stoutly keeled in the middle at the base and with a narrower keel on either side; the apex testaceous. Fore legs and femora slender. Apical tooth of mandibles long, sharply pointed, the others indistinct. Clypeus projecting, roundly narrowed at the apex. Basal abscissa of radius straight, obliquely sloped; the apical roundly curved.

This is not a true *Epyris*; but having only a single δ , I do not care to found a new genus on it. It has practically only one long tooth on the mandibles, and in the clypeus projecting at the apex it differs from the typical species.

Rhacoteleia, gen. nov.

Sub-marginal nervure long, longer than the others united, marginal nervure very short, half the length of the stigmal, which has a knob at the end, the post marginal about three times the length of stigmal branch. Antennæ 13-jointed, the last six forming a club. Mesonotum and scutellum flat, the parapsidal furrows distinct, crenulated. Abdomen longish, longer than the head and thorax united, convex above and below, the sides margined; sessile, the basal segment strongly striated, the striæ distinct and clearly separated; the base of the second segment depressed, stoutly striated; the base of the first clearly margined. Mesopleuræ largely and deeply excavated. Scutellum broader than long, transverse at the base and apex, where there is a crenulated furrow. The third abdominal segment is longer than the second and fourth, which are about the same size. Antennæ inserted immediately over the mouth; the scape long. Legs slender, all the tibiæ one-spurred, the basal joint of hind tibiæ as long as the others united, about three times longer than the second. Metanotum rugosely punctured, shorter than the scutellum, depressed and transverse at the apex.

The head is large, rounded in front, transverse behind; the occiput margined; temples wide; ocelli in a triangle. the hinder

almost touching the eyes. Prothorax small. Malar space large. Eyes gradually narrowed from above downwards. The wings, when folded, do not reach to the apex of the abdomen.

Allied to *Macroteleia* and *Chromoteleia*; from the former it may be known by the stigmal vein issuing from near the submarginal, the marginal being very short as it is in *Chromoteleia*, but that has two distinct basal cellules; from both it may be known by the strongly striated basal segments of the abdomen.

3.—*Rhacoteleia pilosa*, sp. nov.

Plate A, fig. 2.

Black, covered with white pubescence, the antennæ except the apical five or six joints and the legs, except the coxæ rufo-testaceous, wings hyaline, the nervures testaceous, ♂ and ♀.

Length 4 mm.

Peradeniya, August.

Vertex finely, closely aciculated; the front irregularly rugosely punctured; malar space closely, obliquely striated. Apex of mandibles broadly rufous. Hind edge of vertex closely, finely reticulated; occiput shining, finely closely, transversely striated. Mesonotum and scutellum with shallow moderately close, round punctures, thickly covered with white pubescence; lateral lobes of mesonotum clearly separated from the middle one; on the outer side they are bordered by a crenulated furrow. Apex of scutellum bordered by a smooth, shining keel. The depression bordering its sides with stout clearly-separated keels. Pleuræ finely rugose, the mesopleural depression shining, bare, its sides obscurely striated. The third and following abdominal segments distinctly closely punctured. Mesosternum strongly closely punctured. Ventral surface of abdomen closely punctured, thickly covered with white pubescence.

The pedicle of the antennæ is about three times longer than thick; the first joint of flagellum is longer than the second and not quite double the length of the pedicle. The club is clearly defined; its last joint conical. The apices of the abdominal segments are smooth and shining; the ovipositor is longer than usual. The ♂ appears to have the front more strongly rugosely reticulated than the ♀.

CHALCIDIDÆ.

Spilomegastigmus, gen. nov.

Mandibles bidentate, the teeth blunt. Head and thorax smooth, the mesonotum only slightly transversely striated. Scutellum smooth, without a transverse furrow. Antennæ long, the scape

slender, its apex reaching to the hinder ocelli. Hypopygium long, plough-share shaped. Legs long and slender. Apex of clypeus roundly incised.

This new genus cannot well be confounded with any of the described genera of *Megastigminæ*. It comes nearest to *Megastignus*, which may be known from it by the punctured scutellum with a transverse furrow at the apex, by the distinctly 3-dentate mandibles and by the shorter antennal scape, the top of which does not reach to the ocelli. Characteristic is the spotted abdomen, the red head and the thorax, and the projecting cultriform hypopygium.

4.—*Spilomegastignus ruficeps*, sp. nov.

Plate A, fig. 3.

Black, the head, antennal scape, prothorax, mesonotum, the upper part of the mesopleuræ at the base, and scutellum, red; the legs yellow, the femora slightly tinged with rufous; on the sides of the abdomen are four yellow marks, the second is larger and rounder than the others, the apical two longer and narrower than the basal, the wings hyaline, the nervures and stigma black; there is a slightly oblique cloud, narrowed below, at the stigma, ♀.

Length 6; ovipositor 11 mm.

Kandy, July.

Front excavated in the middle with a keel down the centre, the sides roundly convex, projecting beyond the eyes; infuscated. Head much wider than the thorax. Mandibles and sides of clypeus black. Mesonotum transversely striated, but not closely or strongly. Scutellum perfectly smooth. Mesopleuræ obscurely striated. Sheath of ovipositor fringed with long black hair.

EVANIIDÆ.

5.—*Evania interstitialis*, sp. nov.

Red; the head and abdomen, except the petiole, black, the four front legs and hind coxæ rufous, the rest of hind legs black. except the trochanters which are red, mixed with black, the basal half of metatarsus and calcaria which are testaceous and a broad band on the base of the tibiæ, which is white; wings hyaline, the nervures black, the seven or eight basal joints of antennæ testaceous beneath, ♂.

Length 5 mm.

Pundalu-oya, October.

Antennal scape as long as the following two joints united; the pedicle and first joint of flagellum as long as the second united. Head thickly covered with white pile; the front and vertex smooth and shining; the face, oral region and malar space closely,

strongly striated. Apex of clypeus and of cheeks rufo-testaceous. Mandibles yellow, tinged with testaceous, the teeth black. Hind ocelli separated from each other by a distinctly greater distance than they are from the eyes, which very slightly converge above. Middle lobe of mesonotum with some large scattered punctures; the lateral lobes more closely and finely punctured. Scutellum smooth in the centre, the rest bearing large, round, clearly separated punctures. Metanotum closely, reticulated, punctured. Propleuræ smooth, the apex closely striated, the base below with a few short keels. The dilated lower part of the mesopleuræ with shallow, clearly separated round punctures: the edges crenulated. Sternal process distinctly diverging: the branches stout and rounded at the apex. Abdominal petiole longer than the rest of the abdomen, its apical half with scattered punctures, which give it a rough appearance. On the base of the hind coxæ behind is a smooth shining, raised, elongate space, clearly defined from the punctured parts and having at the apex a projecting keel, when pressed together the coxæ appear to be united. Tibiæ minutely, sparsely spinose. The long spur of the hind tibiæ reaches to shortly beyond the middle of the metatarsus.

Pronotum transverse in the middle at the base; the sides broadly rounded, slightly projecting. Cheeks not quite so long as the antennal scape, parapsidal furrows deep, smooth clearly defined. Apical abscissa of radius broadly rounded; recurrent nervure interstitial, as is also the transverse median; the cubitus is largely bullated at the transverse cubital nervure. There is a keel on the upper two-thirds of the face, down the centre.

Allied to *E. dolichopus*, Schl.

6.—*Evania peradeniye*, sp. nov.

Length 4 mm. ♂.

Peradeniya, August.

This species is black with the thorax red as in the preceding species. The two may be separated thus:—

Recurrent nervure interstitial, oral region rufous at the apex, face strongly striated and weakly keeled in the middle, hind coxæ rufous above, *interstitialis*.

Recurrent nervure received beyond the transverse cubital, oral region entirely black, face weakly striated and strongly keeled in the centre, hind coxæ black above, *peradeniye*.

Scape and pedicle of antennæ rufous. Scape of antennæ not much longer than the first joint of flagellum, which is, with the pedicle, as long as the second. Face closely, weakly striated: a stout keel on the upper two-thirds; malar space rather strongly, obliquely striated; thickly covered with white pubescence.

Front and vertex smooth and shining. Hind ocelli separated from each other by a slightly greater distance than they are from the eyes, which converge very slightly above. Shoulders broadly rounded. Mesonotum with a regular row of punctures on the inner side of the furrows and a less regular one on the outer; the lateral lobes minutely closely punctured in the centre. Scutellum with a broad smooth band in the middle, the sides strongly punctured. Hinder division of propleuræ rugosely punctured. Mesopleuræ with round closely pressed punctures, except for an oblique smooth band in the middle and a smaller triangular space on the upper side at the apex. Anterior tibiæ and tarsi testaceous, middle trochanters pale, testaceous; the middle coxæ and the underside of the hinder pair at the base rufous; the base of the hind tibiæ and of the hind tarsi white; the spurs testaceous; the long spur of the hinder about two-thirds of the length of the metatarsus; tibiæ and tarsi sparsely spinose. Recurrent nervure received shortly beyond the transverse cubital; lower part of the apical abscissa of the radius broadly, roundly curved. Abdominal petiole above finely closely striated; the sides with two stout keels, which become stouter towards the apex. Hind coxæ above at the base coarsely punctured, the middle closely obliquely striated. Apical branches of metasternal process, straight, obliquely diverging.

Comes close to *E. erythrosoma*, Sch., also from Ceylon. It may be known *inter alia* from our species by its perfectly smooth abdominal petiole.

7.—*Gasteruption tricoloratum*, sp. nov.

Black, densely covered with silvery pubescence; the four front coxæ black, the femora rufo-testaceous, the tibiæ fuscous, broadly white at the base, the fore tarsi white, the middle white, infuscated at the apex, the hind legs black, except for a narrow white band near the base of the tibiæ. Mandibles testaceous, tinged with yellow in the middle, the teeth darker coloured; palpi pale testaceous, wings clear hyaline, the nervures black: apex of ovipositor testaceous, ♀.

Length 12 mm.; ovipositor 12 mm.

Peradeniya, May.

Head smooth and shining, covered with a silvery pile. Hind ocelli separated from each other by the length of the antennal scape. Thorax thickly covered with silvery pubescence; the pro- and mesonotum with round, clearly separated shallow punctures; opaque, granular. Scutellum with a row of round, deep foveæ along the sides. Metanotum with a deep shining

furrow down the middle: the rest irregularly reticulated. The third joint of the antennæ is about one half the length of the fourth, and twice the length of the pedicle. Apical half of mesopleuræ obscurely reticulated; on the apex is a deep, shining, smooth furrow. Second discoidal cellule divided.

8.—*Gasteruption ceylonicum*, sp. nov.

Black, the mesopleuræ and mesosternum ferruginous; the legs black, the fore coxæ ferruginous, the fore femora fuscous; the base of the fore tibiæ and of the tarsi more broadly, white; the hind tibiæ white on the under side at the base. Wings clear hyaline, the nervures black, the second discoidal cellule divided, ♀.

Length 13 mm.; terebra 13 mm.

Pundalu-oya. February.

Third joint of antennæ as long as the scape, more than half the length of the fourth and not twice the length of the pedicle. Mandibles rufous. Centre of clypeus covered with pale golden pubescence. Hind ocelli separated by the length of the third antennal joint. Thorax thickly covered with silvery pubescence. Pronotum stoutly keeled down the middle. Middle lobe of mesonotum closely finely transversely striated; the apex coarsely, irregularly reticulated; the furrows bordering the middle lobe crenulated; the furrows bordering the scutellum indistinct. Metanotum closely transversely reticulated and with a smooth line down the middle. Shoulders with strong, stout teeth; the part behind these closely, irregularly reticulated, the middle depression crenulated. Lower half of mesopleuræ reticulated.

AGATHIDINÆ.

9.—*Agathis kandyensis*, sp. nov.

Luteous, the antennæ, the hind tibiæ and the hind tarsi black: wings hyaline, the base tinged with yellow, a large cloud at the base of the stigma, broadest behind and the apex from near the second cubital cellule dark smoky, the hind wings with a faint smoky cloud at the apex, ♂.

Length 7 mm.

Kandy, May to August.

Head covered with short fuscous hair, lower part of occiput and the malar space distinctly keeled. Pro- and mesothorax closely and rather strongly punctured; the middle lobe raised in the centre, depressed on either side. Scutellum strongly and closely punctured; its apex roundly projecting. Base of metanotum obliquely depressed, irregularly reticulated; the middle strongly irregularly areolated; the central area irregular;

that next to the spiracular triangular, with a curved keel on the innerside; the apical slope bordered by areæ which are widest below; the centre with some irregular keels. Pleuræ strongly and closely punctured; the crenulated furrow on the mesopleuræ wide, with strong striæ; there is an oblique keel on the centre of the metapleuræ.

10.—*Agathis oya*, sp. nov.

Length 7·8 mm., ♀ and ♂.

Kandy, July and August. Pundalu-oya, May.

This species is very similar to the preceding; it may be known by the apex only of the hind tibiæ being black; by the middle lobe of mesonotum being smooth and not raised in the centre, by the central area on the metanotum being distinctly divided into a large basal and a smaller apical area; it is joined to the base of the metanotum by a V-shaped area; the lateral area is triangular; on the apical slope is a V-shaped area bordered by a more irregular V-shaped one. Wings yellowish hyaline, with the costa, stigma, and nervures yellow on the hyaline parts: the first cloud commences at the transverse basal and median nervures, and is narrowed in front, the apical at the end of the stigma; the nervures in the hind wings are yellow, with a slight cloud at the apex. Parapsidal furrows faintly striated.

11.—*Agathis ceylonicus*, sp. nov.

Luteous, the greater part of the vertex, upper part of occiput, the third and following segments of abdomen and the hind tibiæ and tarsi, black; the wings yellowish hyaline, the apex with a fuscous cloud, commencing at the end of the radial cellule; there is a small square black mark at the base of the stigma, ♀.

Length 7 mm.

Kandy, July.

The black antennæ thickly covered with short, stiff pubescence; they are brownish towards the apex. Face and clypeus thickly covered with white, the upper part of vertex and occiput with fuscous pubescence. Thorax smooth and shining, above thickly covered with white pubescence. Apex of scutellum bifoveate, the foveæ shallow. On the base of the metanotum are three small areæ, the central the smaller, with the sides rounded narrowed towards the base, the lateral longer, obliquely narrowed towards the apex; outside these is a triangular area with the apex on the inner side; the central area on the apical slope is triangular; the two areæ outside this are open below; the outer area large, with three angles on the outer side.

12.—*Microdus greeni*, sp. nov.

Ferruginous, the vertex and more or less of mesonotum may be infuscated or blackish, antennal scape rufous; the basal half of the flagellum black, the apical testaceous, tinged with yellow: wings yellowish hyaline to the base of the stigma, beyond that dark fuscous, the first and second cubital cellules and a curved cloud below hyaline; the stigma and apical nervures black; the hind tarsi infuscated; the basal three segments of abdomen and the base of the fourth strongly closely longitudinally, striated.♀

Length 10 mm. terebra 9 mm.

Kandy, July and August.

Head smooth, sparsely pilose; the lower part of the front deeply bifoveate; the space separating the two foveæ triangular. Thorax smooth and shining; the parapsidal furrows deep, smooth. On the base of the metanotum is a curved furrow forming a closed area and having a straight keel in the centre, dividing it into two. From its centre two stout keels run to the apex of the segment forming an elongated area, obliquely narrowed at the base. Pleuræ smooth, the metapleuræ densely pilose, the lower edge bordered by a stout waved furrow. Mesosternal furrow wide, deep, widened at the apex and with some stout transverse keels.

This species is probably variable as regards the amount of black on the vertex, thorax, and apex of abdomen. The antennæ are longer than the body.

CHELONINÆ.

13.—*Chelonus tricoloratus*, sp. nov.

Black, the antennal scape, and pedicle rufous: the anterior legs, middle coxæ and trochanters, and posterior trochanters rufo-testaceous, two spots near the base of the abdomen and a broad band at the base of the hind tibiæ pale testaceous. Wings hyaline to the base of the radius, fuscous beyond it; the nervures and stigma black. Antennæ 23-jointed, ♀.

Length 4 mm.

Trincomalee Col. Yerbury.

Head and thorax closely finely rugose, covered with a minute white pubescence. Mesonotum closely reticulated. Scutellum with some, not very distinct longitudinal striæ. Metanotum irregularly reticulated, more strongly on the apex than on the base of the basal division; the apical slope shining, smooth, reticulated above. Base of abdomen longitudinally striated; the striæ are not numerous and become weaker towards the apex. Pleuræ closely reticulated.

14.—*Phanerotoma hendecasisella*, sp. nov.

Pallid ferruginous to pale testaceous, the apical segment ferruginous: antennæ infuscated at the apex: wings clear hyaline, the stigma and nervures fuscous, the former paler at the base and apex, ♂ and ♀.

Length 3 to 4 mm.

Peradeniya July to December.

Bred from beans (*Canavalia*, sp.) bored by minute pyralid (?) and from buds of *Jasminum pubescens* infested by larvæ of *Hendecasis duplifascialis*, Hmps.

Antennæ 23-jointed, longer than the body. Head shagreened; temples roundly narrowed, occiput deeply roundly incised; clypeus shining, almost smooth, thickly covered with long pale hair; its sides above with a large, deep fovea. Mesonotum coarsely shagreened, its apex obscurely striated; parapsidal furrows only indicated. The suture at the base of scutellum crenulated. Scutellum triangular; its lateral slope stoutly obliquely striated; at its apex is a broad shining black transverse stripe. Metanotum more coarsely shagreened—almost punctured—than the mesonotum; there is a not very strong transverse keel across the middle, above the apical slope; the sides below this project into a blunt tooth or tubercle. Apex of propleuræ obscurely striated; the lower part, at the apex, depressed, with a few distinct short keels. Basal two segments of abdomen shagreened; the apical at the base finely, closely reticulated—punctured, the middle and, to a less extent, the apex, finely, closely, longitudinally striated; the dorsal sutures obscurely crenulated. Second cubital cellule much narrowed at the apex, the nervures almost touching there; the basal abscissa of the radius bounding it is straight and sharply oblique, the abscissa of the cubitus broadly roundly curved, pale at the base; the recurrent nervure interstitial; it and the first transverse cubital nervure are pale, but quite clearly defined. The apex of the hind femora and the hind tibiæ ferruginous; the extreme base of the latter and a broad band above the middle are pallid, almost white. The basal depression of the abdomen is bordered by a keel, which is very faint, if not absent from the middle.

The first and second abscissæ of the radius are roundly curved downwards, the two forming an arc of a circle; the first transverse cubital nervure is straight, oblique to the stigma, then bends to run along side it to the radius, which it joins close to its base, quite close to the stigma. The wings are unclouded and highly iridescent. The second transverse cubital nervure is very faint and not half the length of the recurrent nervure.

CARDIOCHILINÆ.

Ernestiella, gen. nov.

Eyes pilose. Malar space large. Front not much excavated, without keels. Second cubital cellule large, much longer than wide, wider at the base than at the apex; radius roundly curved towards the costa. Transverse median nervure received in the first cubital cellule, clearly distant from the transverse basal; the recurrent nervure received in the first cubital cellule. Radial cellule in hind wings divided. Metanotum areolated. Suturi-form articulation distinct. Abdomen short; ovipositor short. Trophi elongate.

The first and second cubital cellules are separated. Parapsidal furrows deep, the mesonotum distinctly trilobate: the scutellum raised, not keeled. Areola large, 7-angled. The face is not so much lengthened as in *Agathis*, the malar space being about one-third of the length of the eyes. Apex of clypeus broadly rounded; it is separated from the face by a furrow and is broader than long. Anal nervure in fore wings interstitial. Antennæ about 40-jointed. Prodiscoidal cellule open at apex; there is a large cellule at the base of hind wings. Hind calcaria long.

15.—*Ernestiella nigromaculata*, sp. nov.

Luteous, a large broad mark enclosing the ocelli, three large marks on the mesonotum, the central the larger, the greater part of the mesosternum, the antennæ and mandibular teeth, black; wings hyaline, the apex broadly infuscated, stigma black, yellowish at the base; the nervures testaceous, the radius pale at the base. Smooth, shining covered with pale hair. Parapsidal furrows crenulated at the apex. Scutellar depression with six stout keels. Behind the large 7-angled area on the metanotum are two small ones obliquely narrowed behind; on the sides three large irregular ones; on the sides of the apical slope a large one, obliquely narrowed on the outer side, the apex of the middle transverse. Metapleuræ obscurely reticulated. First discoidal cellule at apex half the width it is at the base. Propleuræ deeply excavated, striated below.

Length 6 mm.

Pundalu-oya, March.

MICROGASTERINÆ.

16.—*Microgaster* (?) *carinicollis*, sp. nov.

Areolet large, rounded in front, transverse below; cubitus distinct, radius faint at the base; three cubital cells. Antennæ stout, longer than the body, 19-jointed. Clypeus not separated from the face, foveate at the sides above. Scutellar depression, with a row of stout keels; the apex is bordered by a similar row of keels.

Metanotum keeled down the middle ; the apical slope stoutly reticulated, almost areolated ; eyes villose ; malar space large. First abdominal segment with the central area bordered by keels and with a shorter keel in the centre. Suturiform articulation distinct. Mesopleural furrow wanting. Tibial spurs short, about one-fourth of the length of the metatarsus. There is a narrow, but distinct keel round the centre of the prothorax. Radius and cubitus in hind wings indistinct. Shortly below the middle of the mesopleuræ is a furrow which bifurcates at the apex. On the mesonotum, in the centre, are three furrows, central being the shorter and it is also less distinct. Apices of tarsal joints spinose.

Black ; palpi and four front legs testaceous ; the hind femora and the abdomen, except at the base, red ; the basal two-thirds of the hind tibiæ and the calcaria white, wings hyaline, the nervures and stigma black, the latter white at the base. Head and thorax densely covered with white pubescence, almost opaque. Metanotum depressed at the base. The depression at base of post-scutellum with four stout keels. Post-scutellum depressed at the base. Frontal depression clearly separated, deep, stoutly keeled in the middle. Last joint of tarsi one-half longer than penultimate.

Length nearly 5 mm.

This species comes closest to *Microgaster* as now defined, but is not quite typical.

Bred from larva of *Dasychira securis*. June.

BRACONINÆ.

17.—*Iphiaulax xanthopsis*, sp. nov.

Luteous, the face, oral region, malar space and inner upper eye orbits, yellow ; the antennæ very long, black ; hind tarsi fuscous ; wings yellowish hyaline to the middle of the transverse basal nervure ; beyond that blackish-fuscous : the upper part of the first cubital cellule and a spot below the first transverse cubital nervure hyaline ; basal half of stigma luteous, ♀.

Length 11 ; terebra 4 mm.

Elephant Pass, March.

Face smooth, densely covered with long pale hair. Frontal furrow narrow ; vertex thickly covered with long fuscous hair. Thorax smooth ; impunctate, the median segment thickly covered with long pale hair. Abdomen ovate, broader than the thorax, short ; the area on the first segment longitudinally rugosely striolated ; a keel in the centre ; basal depression smooth. Basal area on the second segment closely striated, not much narrowed towards the apex ; not limited at the apex ; the rest of the segment and the third closely, strongly, rugosely, punctured ; the lateral depression

oblique, large, deep, striated; suturiform articulation, wide, deep, striated; the third segment is closely rugosely punctured; the furrow on its apex is obscurely striated; the fourth segment is punctured, but not closely or strongly; the furrow at its base wide, deep, striated; that on its apex crenulated. The fifth and following segments smooth; the apical two are yellowish; on the centre of the fifth is a deep wide furrow on the apical half; on the sides, at the base, is a wide curved striated furrow.

18.—*Iphiaulax fulvopilosus*, sp. nov.

Luteous, the antennæ black; wings yellowish-hyaline, to near the transverse basal nervure, beyond that dark fulvous; a hyaline cloud occupying the greater part of the first cubital cellule and a smaller one along the outer side of the recurrent nervure; the base of the stigma fulvous. Pubescence dense, fulvous, ♀.

Length 17; terebra 6 mm.

Kandy, June.

Front and vertex sparsely, the face thickly covered with long fulvous pubescence. Tips of mandibles black. Palpi fulvous, covered with fulvous hair. Middle of raised part of first abdominal segment stoutly keeled from near the base; its apex strongly punctured. Basal area on second segment large, triangular, obliquely striated, the oblique striæ, united by curved short ones, forming irregular reticulations; the sides of the segment at the base depressed, without oblique furrows; its apical part and the other segments all over closely, longitudinally striated. Suturiform articulation narrow, deep, striated, not cleft at the sides; the furrows on the following three segments are wider and more dilated in the middle; the basal four segments together are as long as the thorax. Legs stout; the basal four joints of the fore tarsi as long as the tibiæ. The abdomen thickly covered with fulvous pubescence.

19.—*Iphiaulax greeni*, sp. nov.

Black, the scape of antennæ, head, thorax, and four front legs red; wings dark fuscous, the nervures and stigma black, ♀.

Length 11; terebra 17 to 18 mm.

Peradeniya, August and November.

Face rugosely punctured, a smooth line, gradually widened towards the apex in the centre; sparsely covered with long fuscous hair; frontal furrow shallow. First abdominal segment in the centre with four stout irregular longitudinal keels; the outer two unite into one which goes to the apex; the sides of the raised central part margined; on the sides of the central keels are irregular, more or less transverse keels; the lateral depressions irregularly transversely striated. The area on the second segment is long,

reaching beyond the middle of the segment, becoming gradually narrowed to a fine point and continued to the apex by a keel ; its base is irregularly longitudinally striated ; the depression bordering it closely strongly transversely striated ; on the outer side is a long pyriform fovea. Sutureform articulation wide, closely, strongly striated ; the furrow on the apex of the third segment and on the base of the fourth are striated ; on the apex of the fourth is a smooth furrow ; the third segment is strongly and closely striated, but not so strongly, as the second ; the fourth is more finely and closely striated. Hind tibiae and tarsi densely covered with black hair. Apex of sheaths of ovipositor white. Apical abscissa of radius curved, slightly longer than the basal two united ; received in the apex of the first cubital cellule, clearly distant from the first transverse cubital nervure.

20.—*Iphiaulax ernesti*, sp. nov.

Head and thorax red ; the four front legs yellow, their coxae tinged with rufous, hind legs fuscous black ; wings fuscous, hyaline, highly iridescent, the nervures and stigma black, ♀.

Length 8 ; terebra 12 mm.

Peradeniya, October.

Face rugose, thickly covered with long fuscous hair. Temples obliquely narrowed. Antennal scape rufous, about four times longer than thick, of equal width throughout. Front deeply furrowed. Middle area of first segment with two keels, which unite into one shortly beyond the middle ; its sides margined and there is a curved keel which runs from the central two before they unite ; the lateral furrows with some scattered transverse keels. The area on the second segment becomes gradually narrowed to a fine point shortly beyond the middle ; the base finely, distinctly striated ; the depression bordering it has some transverse, not very distinct, striae ; outside it are four curved longitudinal striae ; the fovea on the outer side is rounded at the apex and is of equal width. The third segment is closely, strongly longitudinally striated ; the sutureform articulation, the furrow at the apex of the third and at the base of the fourth are striated ; that on the apex of the fourth is smooth ; there is a J-shaped striated furrow on the sides of the second segment at the base ; the basal two-thirds of the fourth segment is finely, longitudinally striated.

A much smaller and more slenderly-built species than *I. greeni* ; the fore legs are yellow, not rufous ; the antennal scape is more slender and does not project at the apex, and the first and second abdominal segments are finely sparsely striated, not coarsely striated and reticulated.

21.—*Iphiaulax Kirbyi*, sp. nov.

Luteous; antennæ black; wings yellowish-hyaline, the apex with a fuscous border; the base and apex of stigma black, the rest of it and the nervures yellow, a small black cloud at the base of the first cubital cellule, between the radius and the cubitus, ♀.

Length 9 mm.; terebra 7 mm.

Kandy.

Sparsely covered with fulvous pubescence. Face irregularly rugose, covered with pale pubescence. Front and vertex smooth and shining, bare; the former deeply depressed with a deep, clearly defined furrow in the centre. First and second abscissa of radius united equal in length to the third; the cloud at the stigma may be continued along the basal abscissa of cubitus. Middle area of first abdominal segment irregularly, longitudinally striated, intermixed with some transverse striæ; the lateral depression with some transverse keels; the second segment coarsely reticulated in the middle; the basal area triangular, smooth; the oblique furrow on the lateral depression crenulated; the keel at the basal area short, indistinct. Suturiform articulation stoutly crenulated, as are also the furrows on the apex of the third and fourth segments; they are closely punctured.

22.—*Iphiaulax erythrourea*, sp. nov.

Plate A, fig. 7.

Head, thorax, antennal scape and four front legs rufotestaceous; the abdomen black, the fifth and following segments bright ferruginous, the hypopygium paler, more yellowish at the base; wings yellowish-hyaline, paler at the apex; the middle tibiæ covered thickly with pale pubescence; the hinder still more thickly with longer black hair, ♀.

Length 12 mm.; terebra 17 mm.

Kandy.

Antennal scape thickly covered with long fulvous hair. Face coarsely rugosely reticulated. Thorax smooth and shining; the apex of median segment black. The central area of basal segment of abdomen stoutly keeled in the middle; the keel bordered by stout oblique striæ. The second segment is strongly longitudinally striated; the basal area small, triangular, smooth, followed by a stout keel which runs to the smooth apex; the third is similarly striated, but with a broader smooth apical area; both segments are depressed laterally; the suturiform articulation wide, deep; on the fourth segment, shortly behind the middle, is a transverse furrow which is irregularly striated in the middle. The basal abscissa of the radius is broadly roundly curved towards

the stigma; transverse median nervure received shortly beyond the transverse basal. Occiput transverse in the middle, the sides broadly rounded.

Characteristic of this species is the broadly rounded basal abscissa—not straight and oblique as usual—of the radius and the fact of the transverse median nervure being received shortly beyond the transverse basal. The recurrent nervure is interstitial. The densely haired hind tibiæ are also noteworthy.

23.—*Ipbiaulax haragamensis*, sp. nov.

Black; the base and basal half of the sides of the ventral surface lacteous; wings fuscous-hyaline, the nervures and stigma black, ♀.

Length 7; terebra 1.5 mm.

Haragam, July.

Head covered with longish hair, fuscous, silvery on the lower part of the face. Front and vertex smooth: the former deeply furrowed. A reddish spot above each antenna. Palpi black, covered with white pubescence. The pleuræ and the scutellar region marked with rufous. The first and basal half of the second abdominal segment coarsely rugosely punctured; the following three strongly, closely, longitudinally striated; the furrows are more closely striated; the last segment white-lead coloured, finely, closely, transversely striated. Abdomen broad, ovate, as long as the head and thorax united; the area on the base of second segment indistinct, smooth at the base, the apex finely striated.

Rhacopathius, gen. nov.

Plate A, fig. 4.

Transverse median nervure in fore wings received beyond the transverse basal. Metanotum with three large closed areae at the base; the central keel bifurcates at the apex, forming a triangular area open at the apex; the rest of the segment and the pleuræ striated. Otherwise as in *Spathius*.

24.—*Rhacopathius striolatus*, sp. nov.

Black, the basal two-thirds of the second abdominal segment and the legs red, the fore legs paler, more yellowish in tint. Wings hyaline, the stigma and nervures fuscous, ♀.

Length 7; terebra 5 mm.

Kandy, October.

Mesonotum, except at the base of the central lobe, closely, strongly, irregularly reticulated. Scutellum minutely aciculated, the sides with a row of foveæ. Metanotum irregularly striated and

reticulated ; the basal areæ smooth at the base, the sides furrowed ; the inner side finely, closely striated along the central keel ; the apical slope irregularly rugosely striated. Propleuræ strongly obliquely, the upper part of the mesopleuræ longitudinally striated ; the lower part, near the base, finely, closely, slightly, obliquely striated ; the apex rugosely punctured. Basal two-thirds of mesosternum bordered by a deep furrow. Abdominal petiole closely, strongly striated. Probrachial nervure in hind wings interstitial ; the third abscissa of radius longer than the basal two united. Face, except for a smooth shining line in the centre, closely transversely striated ; the front closely striated, except at the sides ; the vertex and temples smooth and shining. Legs sparsely haired ; the hind coxæ striated on the outer side.

Philomacroplæa, gen. nov.

Apex of sixth abdominal segment broadly, deeply, roundly incised in the middle. First abdominal segment sessile, excavated at the base, keeled on the top ; it, and the second segment, keeled down the middle ; the sutures of the segments narrow ; the apical segments are curled downwards ; the abdomen short, broad, not unlike the abdomen of *Chelonus*. Metanotum smooth and shining, stoutly keeled down the middle. Parapsidal furrows distinct, deep, crenulated. Last joint of hind tarsi not much dilated, as long as the second. Ovipositor short, broad. Antennæ longer than the body, the second joint of flagellum about twice longer than thick. Malar space large, furrowed down the middle. Third abscissa of radius about three or four times longer than the basal two united. Temples obliquely narrowed. A broad furrow behind the ocelli.

The abdomen is more like what it is in the *Cheloninae* than in the *Braconinae*. It is allied to *Tropidobracon*, *Baryproctus*, and *Plesiobracon*, all of which have a stout keel in the centre of the metanotum ; but, among other differences, the present genus should be readily separated from them by the keeled base of the first abdominal segment, by the first and second being keeled down the centre ; by the last segment being roundly broadly incised, and by the very long third abscissa of the radius.

25.—*Philomacroplæa basimacula*, sp. nov.

Head, thorax and the middle of the first and second abdominal segments broadly rufo-testaceous, the mesosternum and the base of metapleuræ above blackish ; wings hyaline, the nervures and stigma fuscous ; the legs pale testaceous, almost white, ♀ and ♂.

Length 3·5 mm.

Bred from *Macroplæa elisa*.

The long black antennæ densely covered with a short white microscopic pile, as are also the thorax and abdomen. The upper half of pleuræ closely, minutely punctured; the scutellum is less distinctly punctured, its sides densely pilose. Metanotum very smooth and shining. Abdomen very closely, uniformly, and rather strongly punctured; the apices of the third and following segments narrowly rufous at the apex. Scutellum triangular, broad at the base. The second cubital cellule is widened at the base, the first transverse cubital nervure being very obliquely sloped. The anal nervure in the fore wing issues from shortly below the middle of the transverse nervure. The lower half of the base of the mesopleuræ is depressed compared with the upper.

RHOGADINÆ.

Paraspinaria, gen. nov.

Abdomen with seven segments; the first longer than broad, the central area large, wide; the second segment without an area; the sides depressed at the basal half; ovipositor short, hardly projecting. Metanotum irregularly reticulated; the sides at the apex, with a long stout tooth. Hind wings with an enclosed probrachial cellule, reaching shortly beyond the middle of the basal abscissa of the cubitus; the nervure broadly rounded at the apex; the cubitus and radius complete; there are no other apical nervures. Lower part of mesopleuræ depressed, clearly separated from the upper; the hind edge of mesosternum has a stout conical tooth. Radial cellule long reaching to the apex of the wing; apical abscissa of cubitus longer than the basal two united; recurrent nervure received in the first cubital cellule. Antennæ longer than the body; temples obliquely narrowed; occiput almost transverse, margined. Palpi long.

The affinities of this genus are clearly with *Spinaria*. That genus may be known from it by the abdomen having only five segments, these being spined and longitudinally striated; its anal nervure is interstitial and the prothorax has a spine as a rule. The antennæ in my genus are placed opposite the middle of the eyes, which are incised. The pronotum is large; its centre at the base is triangular, the rest is depressed at the sides and apex. Abdomen as long as the head and thorax united.

26.—*Paraspinaria pilosa*, sp. nov.

Plate A, fig. 9.

Luteous; antennal flagellum, apical third of hind tibiæ and the hind tarsi black; wings hyaline; the nervures and stigma yellow; the costa near the stigma and a small square cloud below it black, ♀.

Length 9 mm.

Kandy, June.

Shining, thickly covered with white pubescence. Parapsidal furrows deep, the middle lobe of mesonotum clearly raised. Base of propleuræ with three stout keels, the middle one not reaching, like the others, to the lower edge. Scutellar depression large, deep, with a stout central keel and a narrower oblique one on either side. Metanotum with four areæ on the centre of the basal region; the basal large, longer than broad, the apical smaller, dilated on the outer side; the other areæ not clearly defined. The apical lateral teeth are large, longer than the width at the base; they become gradually narrowed, with the apex rounded. First abdominal segment irregularly reticulated, the sides less strongly than the centre; the second is also irregularly reticulated; there is a keel down the centre, reaching to the apex; the lateral keels are stouter and shorter. Suturiform articulation stoutly, closely striated. The apical depression of the middle lobe of mesonotum is reticulated; there is a distinct furrow on the apex of the middle lobe. Metasternum bordered by a stout keel.

Holcobracon, gen. nov.

Lower part of mesopleuræ with a distinct crenulated furrow. Median segment closely reticulated, keeled down the middle; the sides at the apex below projecting into a blunt tubercle. Mandibles stout, edentate, the apex transverse in front, oblique, the basal half slightly roundly incised. Clypeus separated from the face by a depression, roundly convex, thickly covered with long hair. Malar space longer than the eyes. Temples broad. Occiput margined, more distinctly on the sides than above; roundly incised. Scutellum flat, legs stout; the fore coxæ largely project below, the trochanters issuing from the upper part; fore tibiæ stoutly toothed. Anal nervure in fore wings interstitial; in the hind wings there is a discoidal nervure which runs from the prædiscoidal to the apex, there being thus three longitudinal nervures in the hind wings; there is a large closed præbrachial cellule, which becomes gradually wider towards the apex. Abdomen broad, the basal segments closely striated; suturiform articulation deep, roundly curved.

The apical abscissa of radius reaches to the apex of the wings and is twice the length of the second; the transverse median nervure is received distinctly beyond the transverse basal; the recurrent in the first cubital cellule.

There are three genera known to me which possess the anomalous character of having a curved nervure issuing from the præbrachial

transverse nervure to the apex of the hind wings. These genera may be separated as follows :—

(a) Hind coxæ with two teeth...*Acanthobracon*, Cam. (Szep.).

(b) Hind coxæ toothless. Apex of mandibles stoutly toothed ; sides of median segment toothed at the sides above the apex, the scutellum convex...*Trichiobracon*.

Apex of mandibles not toothed, transverse ; sides of metanotum not toothed above ; the scutellum quite flat...*Holcobracon*.

These three genera form a natural tribe, *Holcobraconini*, allied to *Doryctini*, which should be readily known by the hind wings having three longitudinal nervures running to the apex of the wings ; the abdomen sessile, the mesopleuræ with a distinct crenulated furrow along the lower border, the metanotum toothed or tuberculated above or below, closely reticulated and the basal three segments of abdomen longitudinally striated, with a distinct curved crenulated suturiform articulation and oblique furrows as in *Iphiaulax*, and stoutly toothed fore tibiæ.

27.—*Holcobracon fulvus*, sp. nov.

Plate A, fig. 6.

Rufo-fulvous, the antennæ black ; wings yellowish-hyaline to near the apex of the transverse basal nervure, with an oblique, irregular cloud in the first cubital cellule, extending below into the discoidal ; the stigma luteous ; hind wings yellowish-hyaline, the apical third smoky, ♀.

Length 18 mm.

Kandy, November.

Body and legs thickly covered with long pale pubescence. Face and oral region closely, finely rugose, thickly covered with fuscous pubescence, the clypeus with long fuscous hair. Front and vertex smooth, shining, almost bare. Pronotum punctured, the punctures large, clearly separated, and each with a longish hair. Mesonotum and scutellum smooth, sparsely haired. The scutellar depression with five stout keels ; the central the larger. Metanotum with a keel down the centre, closely reticulated, the reticulations shallow, irregular in shape, some hexagonal. The centre of propleuræ with some irregular keels. The lower furrow on the mesonotum closely crenulated ; the oblique furrow below the tubercles wide, deep, and with some stout keels. The upper part of the metapleuræ irregularly, coarsely reticulated ; below the furrow strongly, irregularly punctured. Legs thickly covered with long pale pubescence. Basal three segments of abdomen strongly closely striated ; the suturiform articulation deep, roundly

curved, crenulated; there is an oblique furrow on the base of the second segment; the base of the fourth and fifth segments are closely striated.

The metapleuræ and base of abdomen are yellowish; the mandibles and ocellar region are black.

Tropobracon, gen. nov.

First abscissa of radius slightly longer than the second, both together as long as the first transverse cubital nervure. Recurrent nervure widely distant from the apex of the cellule. Second cubital cellule much narrowed in front, being there less than half the length it is posteriorly; apical abscissa four times the length of the basal two united, reaching to the apex of the wing. Parapsidal furrows deep, clearly defined, not reaching to the apex. Basal two joints of flagellum equal in length. Last joint of hind tarsi longer than the third, as long as the first. First segment of abdomen short, broader than long, the sides and top of the apical slope margined.

Abdomen coriaceous, short, broad; the area on the second segment large, reaching to the apex; the ovipositor short, not much longer than half the length of the abdomen.

This genus should be readily known by the recurrent nervure being received at a distinct distance from the apex of the cubital cellule, by the deep, clearly defined parapsidal furrows, keeled basal slope of first abdominal segment, by the short basal two abscissæ of radius, and by the second cubital cellule being narrowed in front and short. *Habrobracon*, Ashm., seems to be its nearest ally, but *inter alia*, that genus should be known by the "basal joint of hind tarsi being about the length of the third, shorter than the second," while in my genus it is double the length of the third and much longer than the second. The parapsidal furrows are much deeper and more clearly separated than usual.

28.—*Tropobracon luteus*, sp. nov.

Luteous, the antennæ black, the hind tibiæ and tarsi infuscated; wings hyaline, highly iridescent, the nervures and stigma black; the recurrent nervure received shortly beyond the middle of the cellule, ♀.

Length 4 mm.; terebra 1 mm.

Pundalu-oja, March.

Face shining, aciculated, covered with a white pile; a distinct curved furrow over the clypeus. Malar space long, two-thirds of the length of the eyes. Front and vertex smooth. Temples

oblique, rounded. Occiput rounded, not transverse. Mesonotum and scutellum shining; its middle lobe reaches to the base of the apical third, is then united to the apex by a stout keel, with a narrow striated border on either side. Metanotum closely rugose. First abdominal segment short; its base rather abruptly sloped, its sides and apex margined. The segments are closely, finely punctured; the area on the second segment large, becoming gradually narrowed towards the apex; the furrows striated, not uniting at the apex; there are no lateral furrows at the base. Sutureform articulation striated: there are no furrows on the other segments. There is a distinct curved furrow below the middle of the propleuræ.

Troporhogas, gen. nov.

Transverse median nervure received near the base of the cellule, close to the transverse median; recurrent nervure received near the apex of the cellule; second cubital cellule twice longer than wide, of equal width throughout; anal nervure not interstitial. Eyes large, clearly incised on the inner side; malar space small. Temples short, oblique. Occiput sharply margined, transverse. Palpi very long, slender, pilose, 4- and 5-jointed. Metanotum with two roundly diverging keels on the base. A depression on the lower side of the mesopleuræ. Basal three segments of abdomen closely longitudinally striated; the basal two with a keel down the centre; sutureform articulation crenulated; there are crenulated furrows on the fourth, fifth, and sixth segments; the base of these segments is depressed, the apex of the segments being raised and clearly separated from the base of the following. Hypopygium large, cultriform; ovipositor shortly projecting, the sheaths stout; antennæ longer than the body, slender, pilose, over 50-jointed. The abdomen is fully twice the length of the thorax; the legs long and slender; the femora narrowed at the base. The first abscissa of the radius is not half the length of the second; the third is the longest and is curved upwards. The tarsi longer than the tibiæ; the metatarsus longer than the two following joints united.

In Dr. Ashmead's system (*l.c.*) this genus could only be confounded with *Rhogas*; that genus may be known from it by the transverse median nervure being widely distant from the transverse basal, by the metanotum having a stout keel down the centre, not two at the base, by the shorter abdomen, with the segments not sharply separated; the shorter and stouter legs with the tarsi not longer than the tibiæ; and the hypopygium is not large and cultriform.

29.—*Troporhogas spilonotus*, sp. nov.

Pallid testaceous, the legs paler in tint; the ocellar region, marks, more or less distinct, on the mesonotum, the metanotum to the top of the apical slope, the base of the mesopleuræ and large marks on the base of the abdominal segments, the penultimate segment entirely, black. Wings clear hyaline, the nervures pallid testaceous, the basal half of the stigma fuscous, ♀.

Length 7 to 8 mm.

Peradeniya.

The amount of black on the thorax varies; the hind coxæ and trochanters may be marked with black. The entire body and legs thickly covered with white pubescence. First and second abdominal segments strongly and closely striated throughout; the third is less strongly and closely striated, the striæ becoming fainter towards the apex. The pleuræ may be largely marked with black: the mesopleural furrow is striated. Parapsidal furrows wide and deep; the apex of the middle lobe of the mesonotum is depressed and with a distinct furrow in the centre. Scutellar depression large, deep; a stout keel in the centre and a narrower oblique one on the sides. Scutellum narrowed towards the apex. Metanotum finely, irregularly rugose; the apex with some irregular keels.

30.—*Troporhogas albipes*, sp. nov.

Rufo-testaceous, the oral region, lower outer orbits, and legs white; the four hind coxæ brownish-red: a broad band on the thickened apex of the hind femora (but not reaching to the apex) black; scape of antennæ rufous, the flagellum yellowish-white. Wings hyaline, slightly suffused with fuscous; the apex with a fuscous narrow cloud round the edges; the stigma testaceous, the nervures fuscous, ♂.

Length 9 mm.

Kandy.

Sides of front stoutly, obliquely striated; face irregularly wrinkled. Propleuræ stoutly striated; the mesopleuræ wrinkled and irregularly striated, closely and strongly below; the metapleuræ closely, finely, rugosely punctured. Prosternum yellowish, depressed in the middle and with a longitudinal keel there, which is bordered by a row of foveæ. Parapsidal furrows striated; the apex of the middle lobe closely striated and reticulated. Scutellum convex, roundly narrowed towards the apex, which is rounded; a keel runs from the sides of the apex to the wings; the space inside this is depressed and striated in the middle. Median segment closely rugosely punctured, the punctures running into reticulations. Back of abdomen closely rugosely striated; the furrows are more strongly and distinctly striated.

31.—*Troporhogas maculipennis*, sp. nov.

Plate A, fig. 5.

Testaceous, the part between the ocelli, the greater part of the mesopleuræ, and the apical two segments of the abdomen blackish; the upper part of the thorax infuscated. Wings hyaline; the apex smoky, before and behind from before the second transverse cubital nervure, the middle from beyond it; there is a narrow cloud along the anal nervure, which is thick and black, the apex white and thinner, ♀.

Length 12 mm.

Kandy, July and August.

Vertex at the sides of the ocelli closely, the front more strongly obliquely striated. Face thickly covered with long fuscous hair. Mesonotum with a few scattered punctures, shining, covered with a short blackish pubescence. Scutellar depression not very deep; the central keel not very stout. Metanotum at the sides of the base closely rugose, the centre and the rest to the middle of the apical slope irregularly reticulated. Propleuræ with some stout oblique striæ; the mesopleuræ obscurely punctured, the centre with an oblique depression; metapleuræ closely rugosely punctured. Basal four segments of the abdomen closely longitudinally striated; the fifth closely and strongly, the others sparsely punctured.

32.—*Troporhogas tricolor*, sp. nov.

Plate A, fig. 8.

Antennæ black. Head rufo-testaceous, the vertex behind and the occiput black; the oral region, mandibles, and palpi pale yellow. Thorax black, the mesonotum, scutellum, and upper part of pleuræ rufo-testaceous. The first abdominal segment, the base and the sides, more broadly, especially behind, of the second, the sides of the third and fourth, the fifth, except for a line on the sides at the apex, and the apical, entirely yellow, this being also the case with the ventral surface. Four front legs whitish yellow; the middle tarsi infuscated; the hind legs black. Wings hyaline; the stigma and nervures black, ♀.

Length 7 to 8 mm.

Kandy, June.

Face closely punctured, the middle at the sides of the raised part striated. The vertex at the sides of the lower ocellus transversely, the front more coarsely, obliquely striated. Mesonotum and scutellum smooth, neither punctured nor striated. The basal keels on the metanotum are stout and have two transverse ones between them; the part on either side, almost smooth, on the

outer side distinctly striated ; the apical slope strongly, irregularly reticulated. Base of propleuræ and of mesopleuræ strongly striated ; the metapleuræ rugose, the apex striated. First abdominal segment closely punctured, finely striated on either side of the keel ; the second strongly, irregularly striated ; the suturiform articulation strongly, regularly striated ; the third and fourth, except at the apex, closely striated ; the other segments closely punctured. The radius and cubitus from the transverse cubital nervure are white.

33.—*Troporhogas ruficeps*, sp. nov.

Head and thorax rufo-testaceous, the antennæ dark fuscous ; the abdomen pale yellow, the first segment except round the apex and more narrowly on the sides, a curved mark on the apex of the second segment, and the greater part of the third, fourth, and fifth on the back, black ; the four front legs yellow, tinged with rufous ; the hind coxæ, femora, except at the base, and the apex of the tibiæ broadly, black, the rest of them whitish yellow ; the tarsi infuscated ; wings hyaline, the stigma and nervures fuscous, ♀.

Length 6.5 mm.

Peradeniya, December.

Face thickly covered with white pubescence ; the sides striated ; clypeal foveæ deep. Vertex behind the ocelli closely, finely striated. Pro- and mesonotum smooth, not striated, a furrow on the apex of the latter ; scutellum impunctate. The two keels on the base of metanotum form a **Λ**-shaped area, with a thin transverse keel at the apex. Basal five segments of abdomen closely longitudinally striated.

34.—*Troporhogas lateralis*, sp. nov.

Rufo-testaceous, the upper part of the pleuræ, the sides of metanotum broadly, the sides of the first abdominal segment broadly on the basal, more narrowly on the apical half, a line on the sides of the second, the line becoming gradually wider from the base to the apex, the third at the sides and its apex from shortly behind the middle, black. Legs pale yellow ; the apex of middle femora infuscated, the apical half of posterior black. Wings hyaline, the nervures and stigma black, ♀.

Length 5 mm.

Peradeniya, August.

Face raised in the centre, striated on either side. Side of front obscurely striated. Pro- and mesonotum shagreened ; parapsidal furrows shallow ; an indistinct transverse furrow at the apex.

Scutellar depression wide, roundly curved, deep, obscurely striated. Metanotum closely rugose, the basal keels indistinct, the sides with some oblique striæ. Pro- and mesopleuræ for the greater part closely reticulated; the metapleuræ finely rugose. The first and second abdominal segments are closely striated, the third obscurely so, the other segments smooth; the suturiform articulation indistinct, only indicated through the apex of the second being raised. The first abscissa of the radius is half the length of the second; the second cubital cellule is half the length of the third.

35.—*Troporhogas trimaculata*, sp. nov.

Rufo-testaceous, the pleuræ paler, more yellowish in colour, the ocellar region and three large marks on the mesonotum black: wings hyaline, highly iridescent, the nervures and stigma black: the costa, base and apex of stigma, and the transverse basal nervure testaceous, ♀.

Length 8 mm.

Kandy, July.

Smooth, shining, impunctate. Scutellar depression large, shallow, divided by a keel. Scutellum smooth, rufous at the apex. Post-scutellum rounded, conspicuous, smooth, dark rufous. Metanotum weakly punctured, a keel down its centre, the keel indistinct at the base. The basal four segments of abdomen closely punctured; the fifth indistinctly so; there is no keel on the basal segments.

A NEW GENUS OF CRYPTINÆ FROM CEYLON.

Bathycrisis, gen. nov.

Abdominal petiole of equal width throughout, the post-petiole not being dilated; it is long and slender. Median segment with two transverse keels; its spiracles about three times longer than wide. Transverse median nervure in hind wings broken below the middle. Disco-cubital nervure broken by a stump of a nervure. Areolet of almost equal width throughout. Apex of clypeus depressed, broadly rounded, above clearly separated from the face, which is dilated in the centre above, there being thus a depression between its apex and the clypeus. Flagellum of antennæ densely pilose, the first joint longer than the second. Front deeply excavated; a stout keel above each antenna. Eyes distinctly, roundly incised on the inner side; the malar space moderate. Parapsidal furrows deep, wide, reaching to the middle. There is a wide, deep, curved furrow on the base of the metanotum; there is no area there. Thorax strongly rugosely punctured. The abdomen is more slender than usual.

I only know the δ of this genus. It comes near to *Osprynchotus*, which may be known from it by the rostriform head, with long malar space, and by the disco-cubital nervure not being broken by a stump of a nervure. In *The Entomologist*, 1903, 182, I described an *Osprynchotus peronatus* from India. I was not then acquainted with the type of *Osprynchotus* from the Cape. Now that I have seen it, I find that my Indian species is a *Linnoceras*, Tasch.=*Osprynchotus* Schmied. non Spin. (Ent. Nachr. XVI., 85). *Linnoceras* may be known from the genus here described by the transverse median nervure in hind wings being broken at, not below, the middle, by the more elongate clypeus, not separated from the face, large projecting labrum, longer, more slender, mandibles, of which the upper tooth is much the longer. In *Bathycrisis* the mandibles are short, thick, with two short stout teeth of equal length. In Dr. Ashmead's tables, Bull. U. S. Nat. Mus. XXIII., 40, *Osprynchotus* is placed in the division with the transverse median nervure in hind wings "broken distinctly below the middle, usually far below the middle," whereas it is broken shortly above the middle.

36.—*Bathycrisis striaticollis*, sp. nov.

Black, the inner orbits, broadly below, narrowly above, a narrow line in the centre of the outer, a mark, longer than broad, transverse at the apex and interrupted in the middle above by a fovea, a mark in the centre of the clypeus, mandibles, except at the apex, a small mark on either side of the pronotum, a smaller one in front of the tegulae and tubercles, lemon-yellow; legs, with the greater part of the femora, the tibiae and the tarsi, except at the apex, rufo-testaceous; the coxae and femora marked below with yellow. Wings hyaline, the nervures and stigma black, δ .

Length 9 mm.

Trincomalee, Col. Yerbury.

Head covered with long white hair. Face closely punctured, the clypeus smooth, the lower part smooth and shining; the part immediately below the ocelli strongly transversely striated, and the striae curved.

The vertex behind the ocelli closely punctured; the occiput margined, the temples wide, obliquely narrowed. Pronotum strongly irregularly striated. Mesonotum closely punctured; in the depressed centre the punctuation is closer and runs into reticulations. The scutellum is less closely punctured and more shining than the mesonotum. Metanotum closely rugosely reticulated. Pleurae closely strongly punctured.